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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON DC 200054

In the Matter of:

Inquiry Concerning the Deployment of Advanced Telecommunications Capacity to All Americans in a Reasonable and Timely Fashion and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996

CC Docket No. 98-146

COMMENTS BY

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INTRODUCTION

The National Grange is the nation's oldest general farm and rural public interest organization. Founded in 1867, today the National Grange represents approximately 300,000 individual Grange members affiliated with more than 3400 local, county and state Grange chapters across the nation. For 135 years the National Grange has been a champion of the idea that residents of rural communities deserve access to the same level of public and commercial services that are enjoyed by Americans living in urban and suburban communities. Today Grange members are concerned about access to high speed, broadband Internet technologies and other advanced telecommunications services in their rural communities. We strongly believe that universal access to broadband Internet technologies must become an integral part of the nation's menu of information services in the 21st Century just as universal mail delivery service and universal telephone service helped define the information technology revolution of the 20th Century.

The National Grange appreciates the opportunity to reply to the Commission's Notice of Inquiry Concerning the Deployment of Advanced Telecommunications Capacity to All Americans in a Reasonable and Timely Fashion and Possible Steps to Accelerate Such Deployment Pursuant to

Section 706 of the Telecommunications Act of 1996. The National Grange believes that the Commission has both an opportunity and a responsibility to examine its current regulatory models with the specific goal to enhance the deployment of advanced telecommunications services to rural and other underserved communities. To date, we believe that neither the deregulatory model applied to the cable industry related to the deployment of cable modem broadband technology, nor the detailed economic regulatory model including wholesale price regulation as currently applied to the telephone industry in relation to the deployment of DSL broadband services have significantly contributed to the reasonable or timely expansion of advanced telecommunications services to rural areas of our nation.

In replying to this NOI the National Grange will focus on issues raised in Section IV. "Is Advanced Telecommunications Capacity Being Deployed to All Americans?"; Section V. "Is Deployment Reasonable and Timely"; and Section VI. "What Actions Can Accelerate Deployment?"

"IV. IS ADVANCED TELECOMMUNICATIONS CAPABILITY BEING DEPLOYED TO ALL AMERICANS?"

The National Grange believes that advanced telecommunications is plainly not being deployed to all Americans, especially to Americans living in farming and rural communities. We further believe that the measure of deployment currently chosen by the FCC severely exaggerates current availability of these services in rural areas. In paragraphs 13, 14, 15, and 17, of the NOI, discussion of zip codes "served" clouds the issue of broadband availability. In rural areas, a single zip code can easily cover more than 100 square miles of territory. We believe that the zip code measure of broadband deployment dramatically overstates broadband availability when a zip code territory is considered "served" when merely a handful of households located within that large a territory can receive broadband services. Instead of availability being measured by limited deployment within large territorial areas, we believe that the proportion of actual households that currently have access to advanced telecommunications services in a particular territorial area is a superior and more accurate measure of the availability of advanced telecommunications capacity.

Across the nation as a whole, the proportion of households that can receive at least basic high speed service i.e. not necessarily the faster "advanced service" as the Commission's defines it, is approximately 60%¹. That is to say, sixty percent is the proportion of households that can receive broadband service that is at least fast enough for text and graphics, but may not be fast enough for full-screen, acceptable, full-motion, entertainment video. "Advanced service", which includes full motion video, requires speeds of 1.5 megabits per second and higher. The speeds of 1.5 megabits over copper lines are limited to 12,000 feet. Therefore, the area of service that is suitable for service at 1.5 megabits or higher is just 44% of the area now ready for basic high speed service². In other words, only about 26% of all American households are

¹ Cable Internet service is available to about 70% of cable homes passed and about 85% of homes are passed by cable. That produces a 60% cable broadband availability. DSL is available to about 50% of homes. The areas served by each greatly overlap and are heavily concentrated in urban areas.

² A serving radius of 18,000 feet of copper limits the area that can be served by standard asymmetric broadband DSL. A smaller circle is defined by the 12,000 feet of copper that limits the area that can be served by DSL at 1.5

capable of receiving advanced broadband service suited to acceptable Internet video transmissions, and symmetrical broadband at speeds that businesses including businesses operating in rural areas usually need³.

While the nation as a whole is making significant progress toward the deployment of advanced telecommunications services, this overall progress masks a lack of significant progress in rural areas. According to a report on advanced telecommunications in rural America issued in 2000 jointly by the U.S. Department of Commerce and the U.S. Department of Agriculture, rural areas are currently lagging far behind urban areas in broadband availability. The report found that while 65% of the households in all cities with populations over 250,000 had cable modem access and 56% of the households in all cities with population of 100,000 had access to DSL service, only 5% of the households in communities of 10,000 or less had access to either cable modem or DSL service.⁴ In communities of 1,000 persons or less, the percentage of households with access to cable modem service is only two-tenths of one percent.⁵

The unevenness of broadband availability is explicitly recognized in the FCC's Notice. The Grange is painfully aware that rural areas are almost devoid of broadband service. Even the FCC's zip code measures show the stark contrast between urban and rural availability. Even more disappointing, it is unlikely that rural American will enjoy broadband service any time soon.

"V. IS DEPLOYMENT REASONABLE AND TIMELY?"

The National Grange strongly believes that rural Americans deserve access to the same basic public and commercial services that urban and suburban Americans enjoy. Advanced telecommunications services is one of those basic services. The current rates of DSL deployment and cable internet service deployment are neither reasonable or timely from the view of our rural constituent's needs. Rural Americans have as much interest and as much at stake in reasonable and timely deployment of high speed broadband service as other Americans. Rural employers need broadband as much as, if not more than urban employers to participate in the higher productivity, and thus competitiveness that broadband can bring. The lack of broadband in parts of urban America is a shortage, but the lack of broadband in rural America is a famine.

The Impact of Broadband Shortages

The rapidly changing face of US agriculture and rural communities demonstrates the need for advanced telecommunications services in rural communities. Of the roughly 1.9 million farms in the United States, roughly 150,000 of those farming operations produce a majority of the

megabits per second. The smaller circle has an area that is just 44% of the larger circle - and in the areas where most broadband is available, cities, we can assume that households are evenly distributed - hence only 44% of households can get service at 1.5 megabits per second. Cable broadband offers a fast, albeit shared download speed, but is almost invariably constrained to 128 kilobits in the upload direction.

³ Businesses prefer symmetrical 768 kilobits or higher, if they are available.

⁴ Advanced Telecommunications in Rural America: The Challenge of Bringing Broadband Service to All Americans; U.S. Department of Commerce and U.S. Department of Agriculture, Washington DC, June 2000 p. ii

⁵ Rural Virginia Town Fights for Broadband Access: *Wall Street Journal*, June 7, 2001, p. B6

nation's food and fiber ⁶. The remaining 1.75 million of those farms rely on off farm income for a majority of their family income. Both groups require access to advanced high speed telecommunications services for their future prosperity.

For the group of commercial farm operations that produce the majority of the food and fiber in the United States, access to advanced telecommunications services will be crucial for their survival as a means of access to expanded markets and as a means of reducing production costs. As USDA recently noted: "Information technology and computer based marketing promise, via "e-commerce", far broader access to markets than has ever been the case before. This access extends to consumers seeking direct buying opportunities, and to producers seeking buyers of all sizes and types for niche as well as bulk products. The consequence is that size and distance are diminishing in importance for successful marketing."⁷ The same compression of distance is evident in the purchase of production inputs for these farm operations. "Large farms still enhance some local economies, but the development of long distance purchasing and marketing of products reduce the contribution."⁸ Therefore access to advanced telecommunications services on a reasonable and timely basis is vitally necessary for US commercial farmers to remain competitive in world commerce.

For the rest of America's farm operations, the first priority is to support the economic infrastructure that will keep non-farm jobs available in rural communities. As rural America diversifies from a natural resource based to a manufacturing and service based economy, the infrastructure needs of that economy change and more closely resemble the infrastructure requirements of urban and suburban communities. For example, in 1969, 877 non-metro counties were dependant on farming receipts for 20% or more of their total annual earnings. By 1999 that number had dropped to only 258 so-called farm dependant counties.⁹ Today seven out of eight rural counties are now dominated by varying mixes of manufacturing services and other non-farming activities.¹⁰

The Precursor Group, a financial analyst, has been eloquent on both the need for broadband in rural areas and the paucity of broadband in those same areas. Precursor also stresses that DSL from telephone companies, not broadband cable, is the broadband service that small companies in rural areas use 90% of the time. That aligns with our perception that in rural areas, while neither is sufficiently available, DSL is more available than cable broadband.

One of the tradition competitive economic advantages of rural areas over urban areas is the availability of substantial amounts of physical space at lower cost. Precursor's research suggests a *surprising correlation*: those small and medium enterprises that require lots of physical space and low rent, also tend to have the most mission critical need for broadband. For example: engineering, manufacturing and construction firms that regularly use computer-aided design (CAD) need broadband to transmit schematics/blueprints efficiently; yet only about 10% have

⁶ Food and Agricultural Policy: Taking Stock for the New Century: U. S. Department of Agriculture, Washington DC, September 2001, p. 4

⁷ Ibid.;p. 3

⁸ Ibid., p. 88

⁹ Ibid., p. 89

¹⁰ Ibid., p. 88

broadband. Farmers and construction companies that need equipment parts have a mission critical need for broadband to efficiently scan schematics and participate in auctions for spare parts; yet only about 10% have broadband service.

Other rural small businesses and public services, which need broadband, but tend to be dispersed from where broadband is being deployed include: residential rural doctors (which need bandwidth to view X-rays and CAT scans from hospitals and specialists), public safety providers, travel agents, educational facilities and home school participants, law and legal firms, and printing companies – to name some of the more obvious industries with largely unmet broadband needs.¹¹

The Kansas City Federal Reserve Board has reached similar conclusions. "Broadband deployment (increased bandwidth) will help level the playing field between rural and urban America".¹² The New York Federal Reserve Board nailed down the relationship between productivity and information technology, including the use of telecommunications equipment: "The analysis also shows that the industries experiencing the largest productivity acceleration in the late 1990s were the producers and most intensive users of IT—a finding that provides direct evidence of information technology's role in the U.S. productivity revival".¹³ Productivity growth is as much a factor in the success of small and medium businesses operating in rural areas as in other parts of the nation.

"VI. WHAT ACTIONS CAN ACCELERATE DEPLOYMENT?"

While we might anticipate that broadband would be deployed first in urban areas, the National Grange believes that broadband deployment is not progressing beyond those areas by more than a token extent. Rural America requires a substantial investment in either cable broadband or telephone company broadband infrastructure, perhaps in conjunction with limited wireless or satellite application. The National Grange believes the Commission should press forward with new initiatives that specifically address the following objectives.

- 1) The Commission should increase support, including technical support, for programs and innovative applications that will expand advanced telecommunications infrastructure and services in rural America. This may include more aggressive cross agency partnering and cooperation at the local, state and federal level.
- 2) The Commission should adopt a new definition of "universal service" which clearly and plainly lays out the goal of extending advanced telecommunications services to all Americans on an affordable basis, regardless of where they live, as soon as possible. The FCC should measure the appropriateness of all future actions to promote or regulate advanced telecommunications services against this goal.

¹¹ How Broadband Deployment Skews Economic/Business Growth, Scott Cleland, the Precursor Group, Feb 22, 2001

¹² Rural America and the Digital Economy: Broadband Deployment (September 27, 2000). Brian Staihr, Senior Economist, KC FRB, at Southern Governors Association Annual Meeting, Little Rock, AR. http://www.kc.frb.org/RuralCenter/speeches/B_SAES_900.pdf

¹³ "Investing in Information Technology: Productivity Payoffs for U.S. Industries", Kevin J. Stiroh Federal Reserve Bank of New York, Current Issues in Economics and Finance, June 2001 Volume 7 Number 6

- 3) The Commission should reform its regulatory approach to issues related to advanced telecommunications services in order to focus on the service being provided rather than the medium that is providing the service. Regulatory initiatives to promote advanced telecommunications services should be consistent across the individual mediums for the delivery of those services
- 4) The Commission should substantially reduce emphasis on regulatory programs that are designed to promote increased competition among advanced telecommunications service providers for existing customers until at least 90% of all Americans have access to basic high speed internet service and other advanced telecommunications services. Existing programs that promote increased competition for current DSL customers have the perverse effect of discouraging further investment by major telephone companies
- 5) The Commission should identify and recommend additional funding mechanisms that may be required in order to bring advanced telecommunications services that are reasonable comparable to services in urban areas to rural areas

As a practical matter, under current regulations, we are unaware of any regulations limiting cable investment in rural communities, although their service areas are less frequently rural. So we do not anticipate that under current market and regulatory conditions that cable providers will quickly extend their infrastructure to offer rural broadband. As a matter of policy however, we believe that advanced telecommunications services delivered by cable companies should be measured against the same goal of universal service as other media.

We are also aware of the Commission's recent efforts to expand the availability of satellite based advanced communications services. These technologies have a great promise of expanding the application of advanced communications services to rural areas. However, due to the inherent time it takes to design and deploy communications satellites, it is unlikely that any significant increase in advanced telecommunications services for rural areas via this medium is likely in less than five years. In addition, new terrestrial based fixed wireless technologies (such as microwave, wireless fidelity and MMDS systems) offer promising opportunities to reach some rural communities, especially when they are combined with existing cable, DSL or fiber optic networks. But distance limitations, the presence of obstructions, atmospheric interference, and high capital costs will make terrestrial wireless technology systems a patchwork solution for rural communities.

Like the cable industry, the satellite and wireless technology communications companies have been largely allowed to operate in a deregulated environment regarding the deployment of advanced telecommunications services. In the past this has resulted in reduced deployment of advanced telecommunications services primarily through the "warehousing" of both satellite slots and spectrum by private companies. There is little evidence that an open auction system designed to produce the maximum revenue for the federal government for allocation of satellite and/or wireless spectrum capable of delivering advanced telecommunications services has resulted in any significant increase in these services in rural areas. However as a matter of policy we believe that advanced telecommunications services by both satellite and wireless technology communications companies should be measured against the same goal of universal service as other media in future auctions.

Telephone companies serve rural areas and invest billions every year, just not in rural broadband. However, current regulations clearly favor expanding competition for current customers using existing facilities and infrastructure at the expense of additional investment in facilities and infrastructure development to serve rural and other underserved areas. We believe that the Commission's fixation on forcing incumbent carriers to subsidize the new data carriers reduces incentives for incumbent carriers to expand facilities for delivering advanced communications services to rural areas in all but the narrowest circumstances. Federal regulations mandate wholesale prices to competing service providers from incumbents that reimburse those incumbents neither for the historical costs of building the network, nor the real costs that must be incurred when the network is upgraded and extended to support broadband¹⁴. This pricing structure clearly will have a negative impact on the decision to invest in broadband in the future, especially in areas where there are fewer potential customers per mile, as in rural communities. Our review of TELRIC leads us to believe it reduces investment in broadband infrastructure in rural areas and is contrary to the goal of universal service.

One example of this is demonstrated by the DSL investment decisions in recent years of a major phone company, Verizon, Inc. Of its 5,000 central offices only 2,050 were DSL-equipped by August 31, 2001, up a mere 200 offices from December 31, 2000. At that pace, the remaining 3,000 offices will take a full 10 years to equip. None of Verizon's 51,000 remote terminals is used to house DSL access multiplexers, a solution that extends DSL service to homes too distant from a central office that otherwise offers DSL¹⁵. Verizon is not the only major phone company to reduce its commitment to universal DSL service in the face of regulations that favor competition for existing customers over expansion of service to underserved areas. SBC has been pursuing Project Pronto for a few years, but recent deployment to remote terminals seems to have slowed as it becomes mired in controversy over who can locate what equipment in its remote terminals and at what price.

Advanced services sufficient to support services that most Americans want will require massive new investments. Phone companies have little incentive to make those investments under today's TELRIC regulations. The Commission's past decisions have chosen to favor increased competition for existing customers of advanced telecommunications services over expansion of those services to underserved areas, such as rural communities. This choice may have had merit in earlier more buoyant circumstances, but it fails the residents of rural America today. Incumbents have reached the end of the road where light investment can turn up DSL. From here on, DSL deployment will need heavy-duty investment, but the Commission's insistence on

¹⁴ "the TELRIC methodology has produced prices well below not only documentable historical and actual costs, but also below even actual forward-looking costs that incumbents incur." THE 1996 TELECOM ACT: WHAT WENT WRONG AND PROTECTING THE BROADBAND BUILDOUT by John Thorne, Lecturer on Law, Columbia Law School, Senior Vice President and Deputy General Counsel, Verizon, http://newscenter.verizon.com/policy/broadband/primer_c.pdf

¹⁵ ¹⁵ Verizon Communications Posts Strong Results For Fourth Quarter and 2000, http://investor.verizon.com/news/VZ/2001-02-01_X300640.html, "Verizon equipped approximately 500 central offices for DSL in 2000 and ended the year with approximately 1,850 equipped offices, 30 percent more than a year ago. An average of 60 percent of the access lines in those offices qualify for DSL, making the service available to 45 percent of Verizon's access lines and households, nearly 29 million and 14 million respectively."

current TELRIC regulations guarantees a loss on new investment and a delay in deployment of advanced communications services to rural America.

Cable and satellite, on the other hand, face neither an obligation to interconnect with competitors, nor an obligation to subsidize a competitor through the Commissions' TELRIC policy. Cable modem technology is so far 40% further deployed across the country than telephone DSL technology nationally but has achieved that favorable position by cherry picking the high margin, high volume urban and suburban market territories and by substantially under-investing in rural communities. Thus, neither the deregulation model applied to the cable modem industry and the satellite/wireless technology industries or the more substantial regulatory management model applied to the DSL technology deployed by the phone industry has served as a viable model for expanding advanced telecommunications services to rural areas.

CONCLUSION

The technology gap between urban communities and rural America will only grow larger unless concrete action is taken. In the 21st Century, both private enterprises and public services in rural communities will have to rely on fast and affordable broadband Internet access and other advanced telecommunications services to remain competitive in the global economy. No one technology will provide ubiquitous high speed Internet access for all Americans. The national Grange believes that the only way to bridge the “digital divide” in rural America is to bring the maximum number of technology choices to rural customers. Therefore, the National Grange believes that the Commission needs to rethink its entire regulatory program to focus on the goal of providing universal service for advanced telecommunications services instead of the existing patchwork of failed regulatory models across different mediums. This would require the Commission to refocus its policies onto rational ways to get advanced services available to rural and other Americans, as quickly and as robustly as possible as well as remove TELRIC prices or other regulations that increase the cost of deployment for broadband deployment. This policy would also align Commission policy with the spirit of Section 706 and the nation's need for pragmatic policies that deliver benefits to all Americans, now.